

Work Order ID 112467

January-30-14 11:45:02 AM

112467

HSM

Page 1

Item ID: D3407-5

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Ring

Stop

NS2

Start Date: 1/30/14 Start Qty: 30.00

30

Cust Item ID:

Required Date: 1/30/14 Req'd Qty: 30.00

30

Customer:

Reference:

Approvals: Process Plan: MLS

Date: 14-01-31

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3407	Rev E								

100

100

FLOW WATER JET

Waterjet

Memo

0.00

30 0 Ae 02-21-14

FLOW CNC Waterjet

1-Cut as per Dwg D3407

Dwg Rev: 6

Prog Rev: 6

2-Break edges on grinder as per Dwg D3407

110

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

0.00

Quality Control

30 0 Ae 02-21-14

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only 

Work Order: _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS					
Part No. _____	Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>		
NCR No. _____							

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear	General			
Bending	Bend	<input type="checkbox"/>	Outside Dimensions	<input type="checkbox"/>
Centre Not Concentric	BOM/Route	<input type="checkbox"/>	Over/Under tolerance	<input type="checkbox"/>
Cracks	Broken/Damage/Defect	<input type="checkbox"/>	Part Incorrect	<input type="checkbox"/>
Crimp/Kink/Ripple/Wave	Burrs	<input type="checkbox"/>	Part Lost/Missing	<input type="checkbox"/>
Cuffs	Contamination	<input type="checkbox"/>	Part Moved	<input type="checkbox"/>
Crushing	Countersink	<input type="checkbox"/>	Positioned Wrong	<input type="checkbox"/>
Heat Treat	Cut Too Short	<input type="checkbox"/>	Power Loss/Surge	<input type="checkbox"/>
Inspection Strip in Tube	Drawing	<input type="checkbox"/>	Other	<input type="checkbox"/>
Marks/Chatter	Drill Holes	<input type="checkbox"/>		
Turning Sequence	Finish	<input type="checkbox"/>		
Wave/Twist in Tube	Fit/Function	<input type="checkbox"/>		

Work Order ID 112467

January-30-14 11:45:02 AM

112467

Page 2

Item ID: D3407-5

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Ring

Stop

NS2

Start Date: 1/30/14

Start Qty: 30.00

30

Cust Item ID:

Required Date: 1/30/14

Req'd Qty: 30.00

30

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC8- Inspect parts - second check

0.00

27

9.89

W/34

120

QC

Quality Control

130

Identify as per dwg & Stock Location: W/MA

0.00

130

Packaging

Packaging

Memo

0.00

*****STOCK IN LARGE FAB*****

30

14-03-18

PL

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Quality Control

Memo

0.00

14-03-19

W/11-03-18

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only

Work Order: _____	DISPOSITION	AGAINST DEPARTMENT/PROCESS					
Part No. _____	Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coor. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>		
NCR No. _____	Suspected Unapproved <input type="checkbox"/>						

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear	General			
Bending	Bend	<input type="checkbox"/>	Outside Dimensions	<input type="checkbox"/>
Centre Not Concentric	BOM/Route	<input type="checkbox"/>	Over/Under tolerance	<input type="checkbox"/>
Cracks	Broken/Damage/Defect	<input type="checkbox"/>	Part Incorrect	<input type="checkbox"/>
Crimp/Kink/Ripple/Wave	Burrs	<input type="checkbox"/>	Part Lost/Missing	<input type="checkbox"/>
Cuffs	Contamination	<input type="checkbox"/>	Part Moved	<input type="checkbox"/>
Crushing	Countersink	<input type="checkbox"/>	Positioned Wrong	<input type="checkbox"/>
Heat Treat	Cut Too Short	<input type="checkbox"/>	Power Loss/Surge	<input type="checkbox"/>
Inspection Strip in Tube	Drawing	<input type="checkbox"/>	Other	<input type="checkbox"/>
Marks/Chatter	Drill Holes,	<input type="checkbox"/>		
Turning Sequence	Finish	<input type="checkbox"/>		
Wave/Twist in Tube	Fit/Function	<input type="checkbox"/>		

Picklist Print

January-30-14 11:45:01 AM

Page 1

Work Order ID: 112467

Parent Item: D3407-5

Parent Item Name: Ring

Start Date: 1/30/14

Required Date: 1/30/14

Start Qty: 30.00

Required Qty: 30.00

Comments: IPP Rev:A New Issue 05-11-22 JLM

IPP Rev:B Now on Waterjet 08-05-14 JLM Verified By:DD

IPP Rev:C 08-08-12 revE as per dwg (ecn 08-507) DD verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M174B0.250X4.000 17-4 SS Bar .250 X 4.00		Purchased	No			100	f	55.2500	0.2666	8.418948			Ar 14-02-24

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
MAT049	55.25	
m127719	17	
m127866	38.25	

127719 → 8.42

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only

Work Order: _____	DISPOSITION			AGAINST DEPARTMENT/PROCESS				
Part No. _____	Rework <input type="checkbox"/>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>			
NCR No. _____	Scrap <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coor. <input type="checkbox"/>	Quality <input type="checkbox"/>			
	Use-as-is <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>			
	Suspected Unapproved <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>				

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear	General				
Bending	Bend	<input type="checkbox"/>	Folio/Program	<input type="checkbox"/>	Outside Dimensions
Centre Not Concentric	BOM/Route	<input type="checkbox"/>	Grain	<input type="checkbox"/>	Pressure/Forced
Cracks	Broken/Damage/Defect	<input type="checkbox"/>	Hardware	<input type="checkbox"/>	Set-up
Crimp/Kink/Ripple/Wave	Burrs	<input type="checkbox"/>	Inspection Incomplete/Unqualified	<input type="checkbox"/>	Temperature/Cure
Cuffs	Contamination	<input type="checkbox"/>	Instructions Incomplete/Unclear	<input type="checkbox"/>	Weld
Crushing	Countersink	<input type="checkbox"/>	Misaligned/off center	<input type="checkbox"/>	Wrong Stock Pulled
Heat Treat	Cut Too Short	<input type="checkbox"/>	Mislabeled	<input type="checkbox"/>	Other
Inspection Strip in Tube	Drawing	<input type="checkbox"/>	Misread	<input type="checkbox"/>	
Marks/Chatter	Drill Holes	<input type="checkbox"/>	Off-set	<input type="checkbox"/>	
Turning Sequence	Finish	<input type="checkbox"/>	Out of Calibration	<input type="checkbox"/>	
Wave/Twist in Tube	Fit/Function	<input type="checkbox"/>	Out of Sequence	<input type="checkbox"/>	

DART AEROSPACE LTD	Work Order:	112467
Description: Tow Ring	Part Number:	D3407-5
Inspection Dwg: D3407 Rev: E		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

x First Article □ Prototype

DAS

Measured by:	<u>AC</u>	Audited by:	<u>27 9-89</u>	Prototype Approval:	N/A
Date:	02-27-14	Date:	13/3/6	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	07.02.02	New Issue	KJ/JLM	
B	07.09.18	Tolerance revised	KJ/EC	
C	08.05.14	Dimensions updated per Dwg Rev D	KJ/JLM	
D	09.05.04	Dwg Rev updated	KJ/DD	<i>[Signature]</i>

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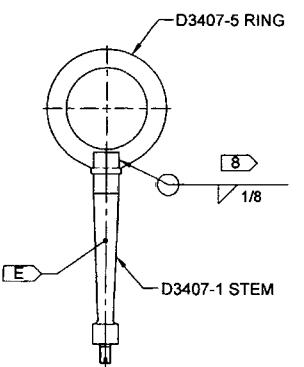
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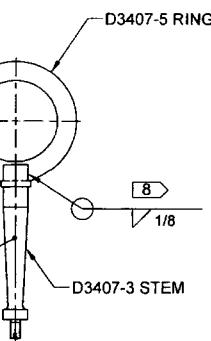
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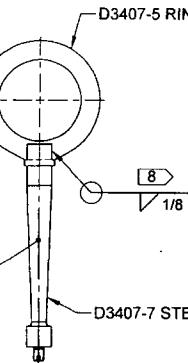
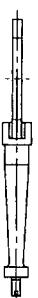
QTY -041	QTY -043	QTY -045	PART NUMBER	DESCRIPTION
X	X		D3407-041	TOW RING
	X		D3407-043	TOW RING
		X	D3407-045	TOW RING
1			D3407-1	STEM
	1		D3407-3	STEM
1	1	1	D3407-5	RING
		1	D3407-7	STEM



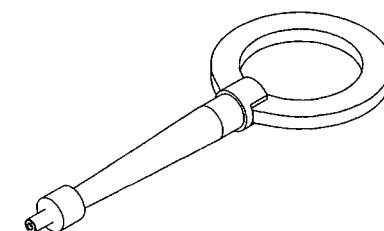
D3407-041 TOW RING



D3407-043 TOW RING



D3407-045 TOW RING E



14-01-31

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 112467 M/C

RELEASED
08-07-2004

E	ADD D3407-045 (ZN B2-1, D8-1); ADD D3407-7 (ZN B6-5); REVISED NOTE 6 TO ADD IDENTIFICATION (ZN A5-1); REASON: PRODUCTION FACILITY	PH	08.07.23
D	D3407-1/3 SLOT WAS ROUND NOW FLAT FOR ASSEMBLY WITH D3407-5 (ZN C2-2, C2-3); D3407-5 WAS ROUND NOW FLAT ON ONE END FOR ASSEMBLY WITH D3407-1/3 (ZN B6-4); REASON: PRODUCTION FACILITY	PH	08.04.07
C	-1/3 LONGER FOR FIT WWASHER	CP	05.09.09
B	UPDATE DIAMETER, THREAD CLASS ADDED	CP	05.06.17
A	NEW ISSUE	CP	05.03.16
REV.	DESCRIPTION	BY	DATE
DESIGN	10	DART AEROSPACE USA, INC.	
DRAWN	10	PORT HADLOCK, WA	
CHECKED		REV. E	
MFG. APPR.		DRAWING NO.	
APPROVED		D3407	SHEET 1 OF 5
DE APPR.		TITLE	SCALE
		TOW RING NTS	
DATE	08.07.23	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR DISCLOSED IN WHOLE OR IN PART TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

A NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3 (EXCEPT THREADS)
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART PIN "D3407-XXX" USING BLACK FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: D3407-041 - 0.60 lbs, D3407-043 - 0.53 lbs, D3407-045 - 0.61 lbs
- 8) WELD PER DART QSI 004 ON ALL EDGES BETWEEN STEM AND RING

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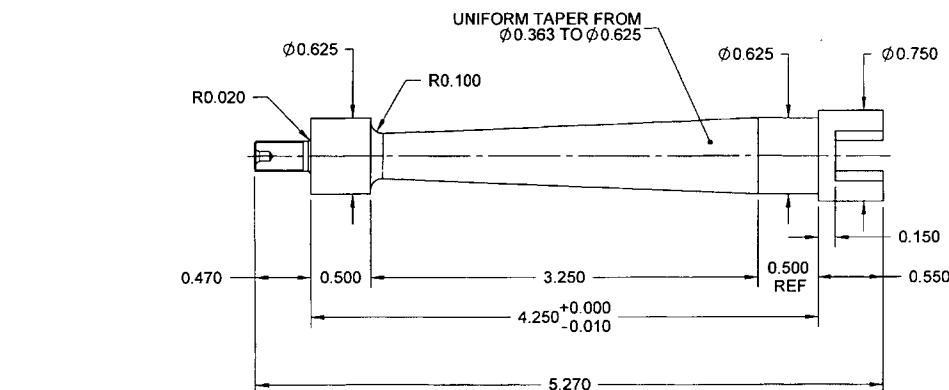
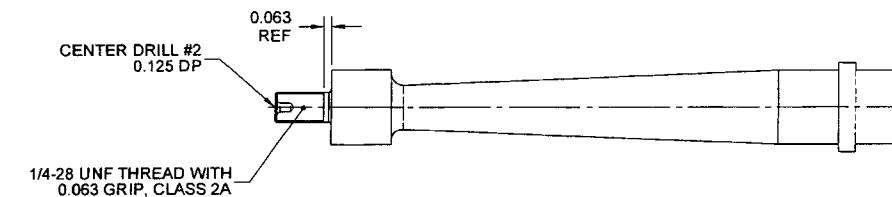
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D

D3407-1 STEM**NOTES:**

- 1) MATERIAL: 17-4 PH SS ROUND BAR PER AMS 5643 (REF. DART SPEC M17-4-R)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: MACHINE ALL INSIDE EDGES WITH A 0.010 RADIUS
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.33 lbs

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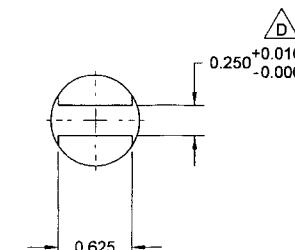
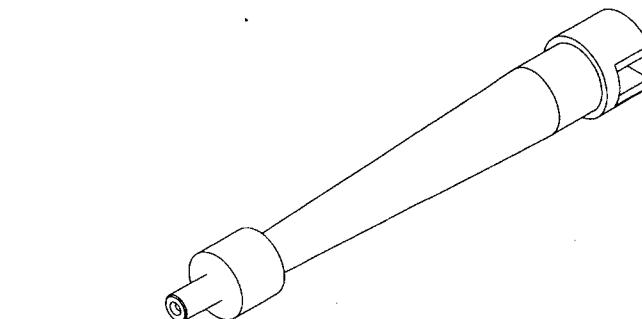
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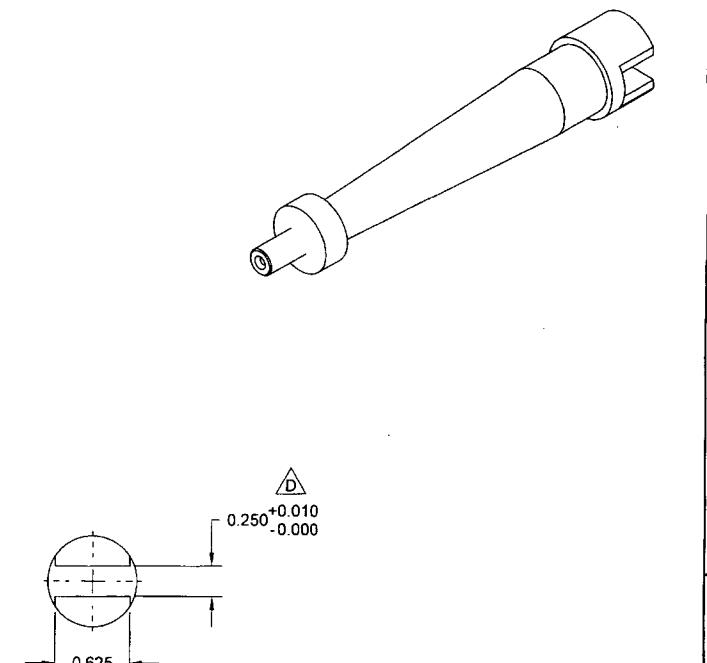
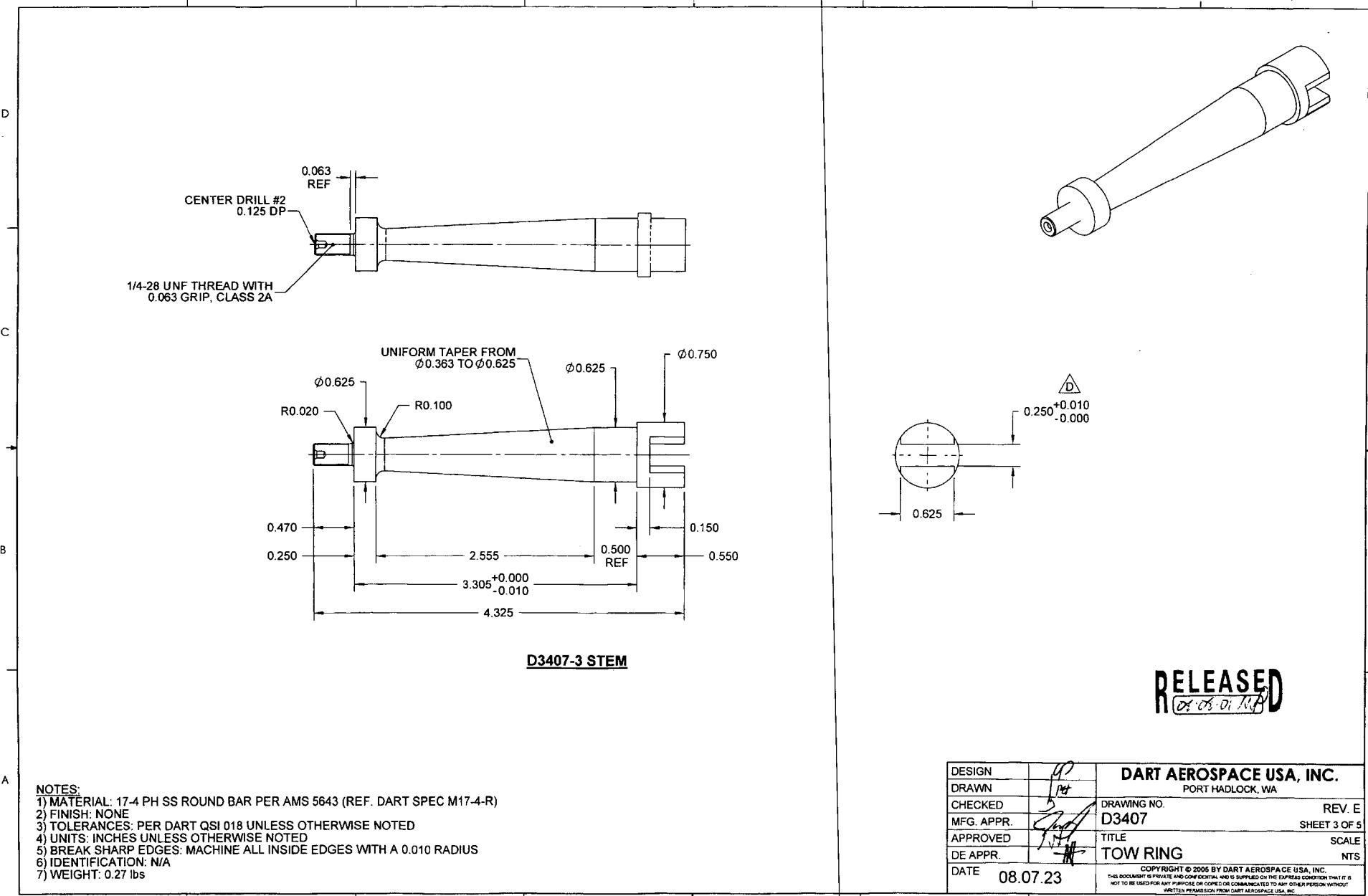
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RELEASED
06-05-01 AM

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DRAWN	<i>[Signature]</i>	PORT HADLOCK, WA	
CHECKED	<i>[Signature]</i>	DRAWING NO. D3407	REV. E SHEET 2 OF 5 TITLE TOW RING SCALE NTS
MFG. APPR.	<i>[Signature]</i>		
APPROVED	<i>[Signature]</i>		
DE APPR.	<i>[Signature]</i>		
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8 7 6 5 4 3 2 1



RELEASED
01/08/04 MP

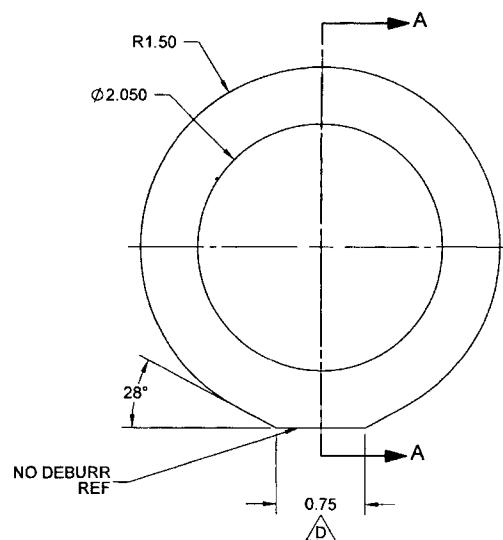
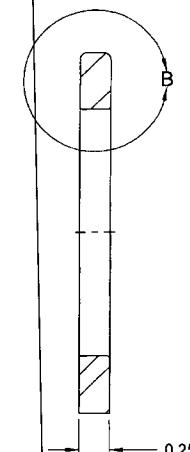
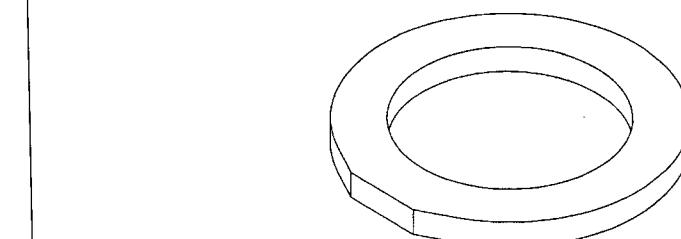
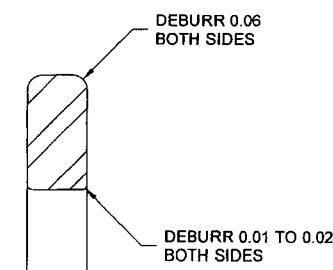
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DRAWN	<i>[Signature]</i>	PORT HADLOCK, WA
CHECKED	<i>[Signature]</i>	DRAWING NO.
MFG. APPR.	<i>[Signature]</i>	REV. E
APPROVED	<i>[Signature]</i>	SHEET 3 OF 5
DE APPR.	<i>[Signature]</i>	TITLE
		SCALE
		NTS
DATE	08.07.23	TO W RING

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8 7 6 5 4 3 2 1

D

D

D3407-5 RINGSECTION A-A

RELEASED
06-08-2023

- NOTES:
- 1) MATERIAL: 17-4 PH SS BAR PER AMS 5604/5643 (REF. DART SPEC M17-4-B)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: 0.27 lbs

8 7 6 5 4 3 2 1

DESIGN	97	DART AEROSPACE USA, INC.	
DRAWN	PER	PORT HADLOCK, WA	
CHECKED		DRAWING NO. REV. E	
MFG. APPR.		D3407 SHEET 4 OF 5	
APPROVED		TITLE SCALE	
DE APPR.		TOW RING NTS	
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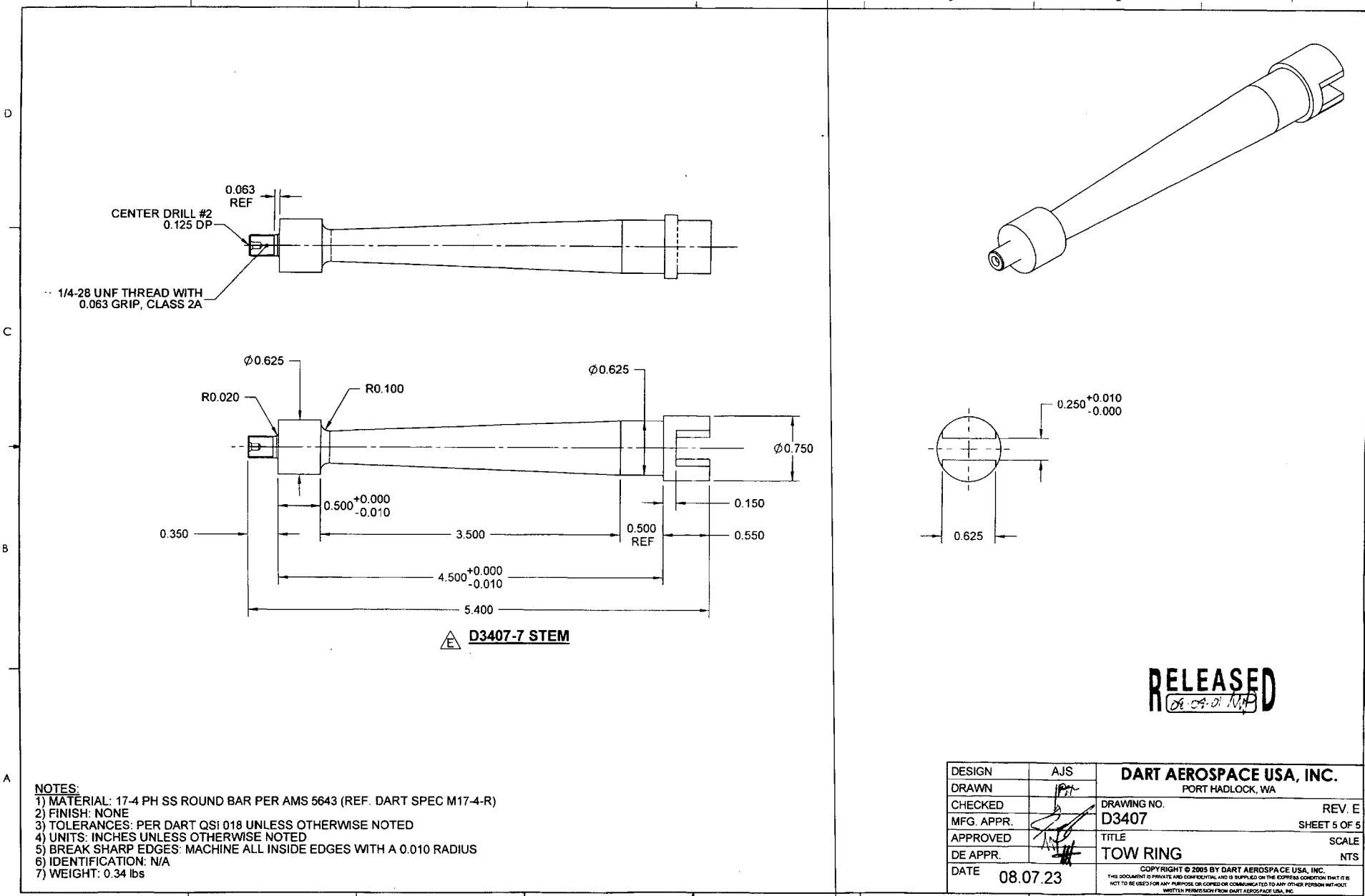
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RELEASED
06-09-01-NP

DESIGN	AJS	DART AEROSPACE USA, INC.
DRAWN	107	PORT HADLOCK, WA
CHECKED		
MFG. APPR.		DRAWING NO. D3407 REV. E
APPROVED		SHEET 5 OF 5
DE APPR.		TITLE TOW RING
DATE	08.07.23	SCALE NTS

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